Technical Committee Conference Call
May 8, 2002
1:00 Pacific Time
Proposed Agenda

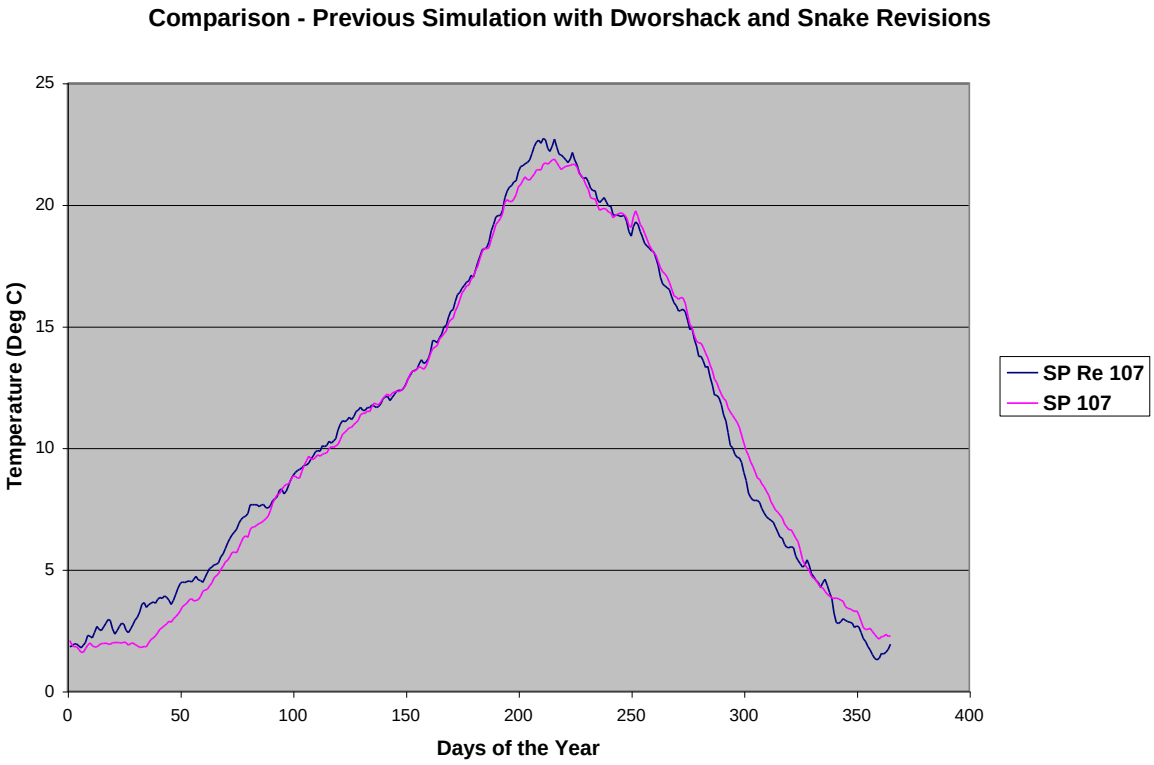
Site Potential Discussion	- Rick, Don, All
TMDL as Temperature or Temperature Difference?	- Rick, Don, All
Status of Point Source Reviews	- Mike, Paul and Bob
Future Growth	- All
Review of Pulp and Paper Meeting	- Rick and Bob

Notes

Site Potential Discussion:

- Don is concerned about using the existing temperature and flow at the boundary conditions on the Snake River because temperature may be cooler now than natural temperatures due to the presence of Dworshack Dam on the N. Fork, Clearwater R. and Brownlee Dam on the Snake. [See attached white paper (revised) on recommendations for upstream boundary conditions]
- Dworshack Dam releases for salmon recovery purposes do cool the Snake River considerably. They dramatically cool the Clearwater at times.
- We are less sure that SOP at Dworshack or Brownlee result in temperatures at the boundary conditions that are below natural temperatures. [While I can't quarrel with this statement for Brownlee (the effect is quite uncertain, and appears to be a net cooling only during the heat of summer), it is quite apparent that Clearwater is much cooler than natural, though by exactly how much is not precisely known.]
- However, John revised the boundary conditions as per Don's recommendations to be closer to what Don considers site potential (Use Orofino and Snake RM 345 temperatures). This is a conservative approach, vis-à-vis thermal load allocation in the mainstem TMDL.
- The first figure below shows the difference in average Site Potential. SP RE 107 is the new revised simulation at Lower Granite. SP 107 is the former simulation. It doesn't appear to make much difference. [This is good to know, helps put upstream influence in perspective. Is this based on 30 year average, or just recent years when Dworshak releases for reducing water T have been cranked up?
- We had originally defined site potential as the existing conditions at the boundary.

- In the case of Dworshack releases for salmon recovery we should probably modify this definition. So we will only use simulations through 1991 to explain exisiting conditions on the Snake.
- However, for standard operation of Dworshack and Brownlee should we change this definition? It doesn't appear to make a great deal of difference, but if we change the definition to try to emulate site potential at the boundary conditions we will be predicting site potential for those reaches without really having done the analysis to substantiate it. [I wouldn't say you are predicting upstream site potential. What you are doing is making a different assumption, a warmer one, which if it turns out to be higher than site potential, will be to the benefit in meeting the mainstem TMDL. What I recommend in my white paper, is in a simple fashion taking out the effect of Dworshak and Hells Canyon Complex on downstream temperatures. This is wholly consistent with what we are doing in the mainstem modeling.



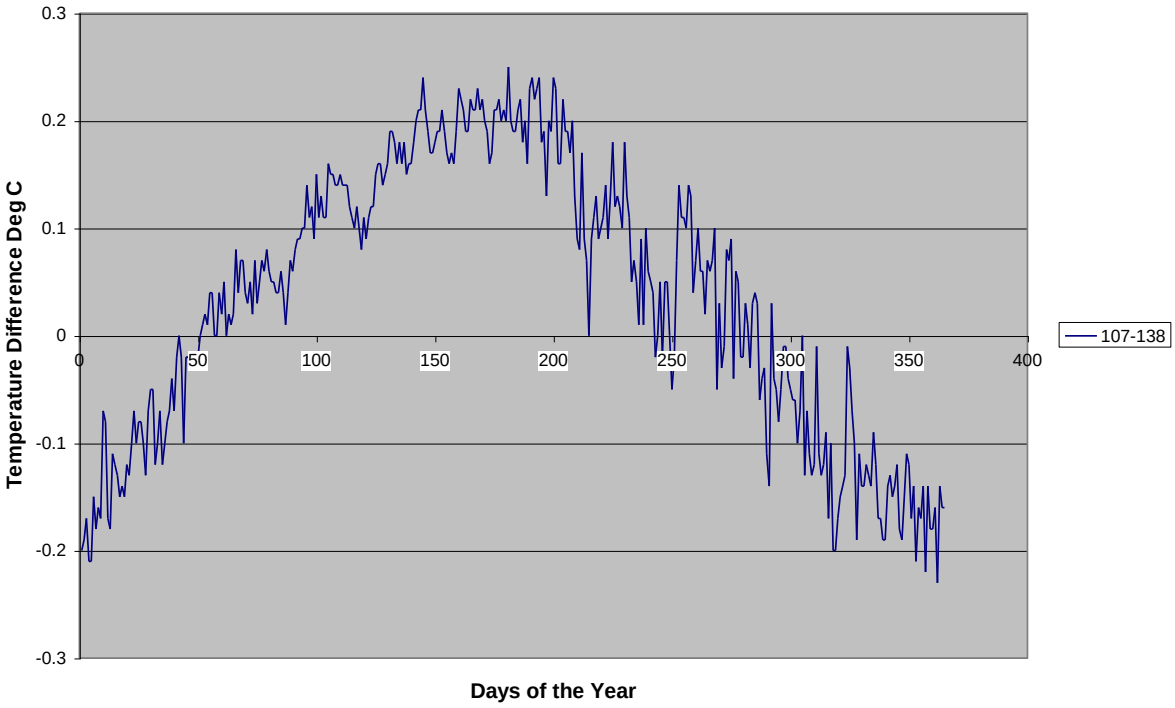
Temperature versus Temperature Difference:

- Don would like to discuss using Temperature Difference between target sites as the TMDL.
- So the assigned temperature increases allowed for each reach (for example the 0.02 and 0.15 increases under 1 approach) would be added to ~~any~~ the natural increases

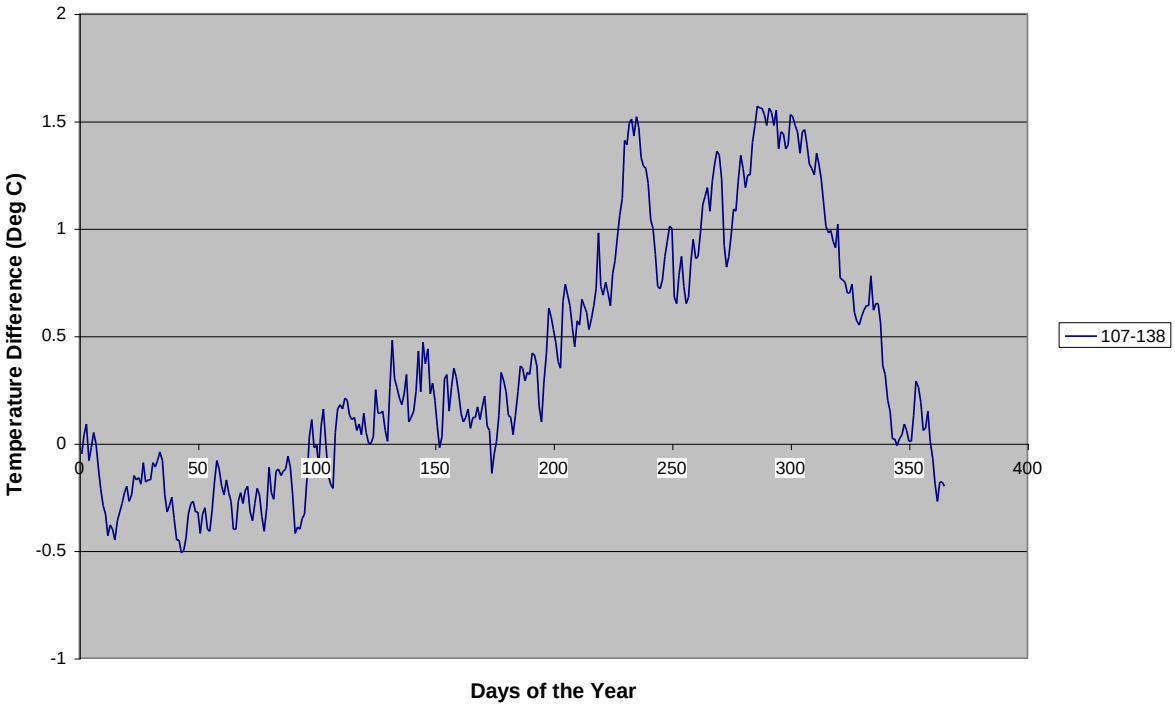
between the reaches at site potential to determine the loading capacity and allocations.

- So if the site potential temperature between Lower Monumental and Ice Harbor increases 0.5 degrees we would add the 0.02 to that and say Ice Harbor's allocation for the entire reach is 0.52. [Not exactly. Their load allocation would be a differential increase of 0.02, or whatever. This delta T could in turn be easily turned in to a flow variable load, for those who insist on a load, or go ga-ga over BTUs/day. However, when it comes to monitoring or gaging compliance, rather than look at absolute T, we would also look at delta T. But since the river temperatures vary, a differential through the facility (impoundment) can filter out the variation in actual T from ones assessment of the facilities effect on water T. But since water T would increase in the natural river, were the impoundment absent, this natural increase has to be accounted for as well in gaging compliance from the average difference between upstream and downstream T measurements. I think this will help reduce the variability, and thus allow us to gage improvement toward the load allocation in less time, and perhaps with fewer measurements than waiting for a year long time series of 30 year average T at the base of each dam.
- The other approach is just to assign the resulting temperature to Ice Harbor. There is a temperature for every day of the year.
- Under the suggested approach we would probably have to assign a temperature difference for every day of the year. See above, we would assign a delta T, as the load allocation, backed up by a flow dependent BTU/day if need be. We could, using what we know about the residual variability in upstream/downstream T differential, accounting for natural rate of increase, calculate the number of paired measuremnts it would take to detect, non-compliance, e.g. an incremental effect on T greater than the delta T allocation.
- The following figures illustrate the average temperature differences throughout the year at 2 stations (Lower Granite and Little Goose). River Mile 138 is where the Clearwater enters the Snake. There is a great deal of variation from day to day. [Indeed, more than I would have guessed, but now we know. On the other hand, this is quite revealing. It seems to amplify the seasonal shift in T. It seems to me with this kind of information, and look at temperatures in the future, it would be more obvious when a facility was out of compliance, or not making progress toward compliance, if, for example, the upstream/downstream differential were 1.5°C on day 300, rather than something much closer to 0.0°C. I don't think that would quite so apparent only evaluating actual T in the tailrace of a single facility in question]

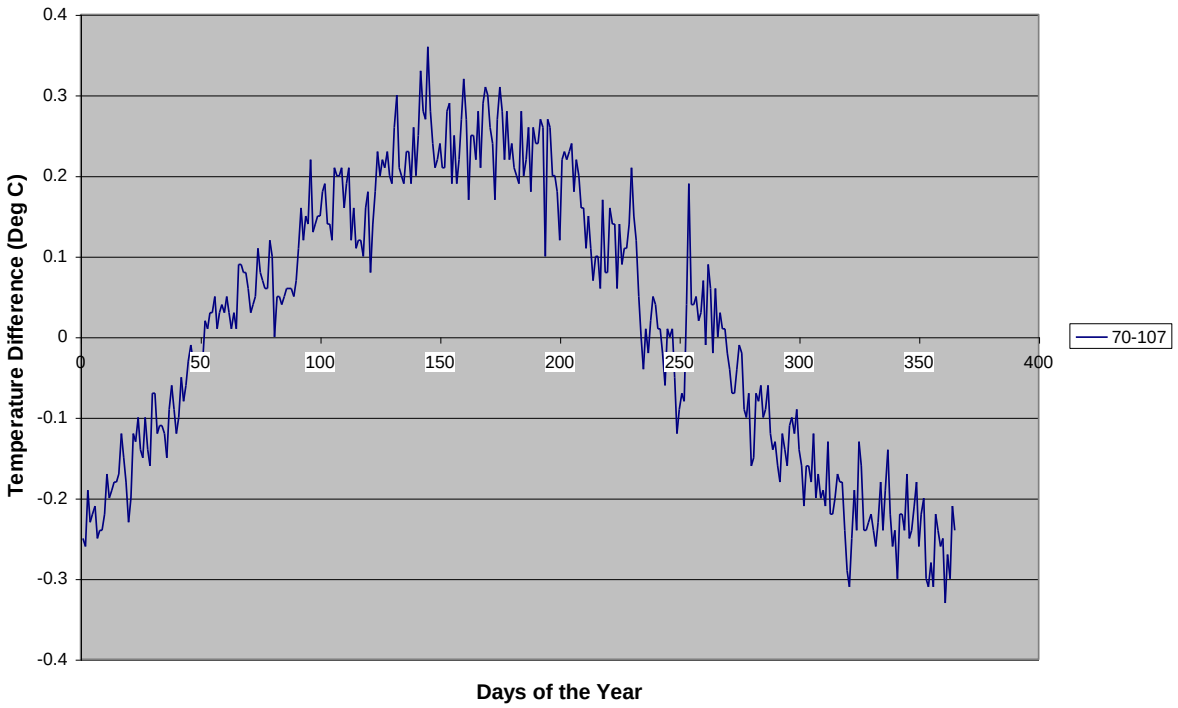
Site Potential 107-138



Impounded 107-138



Site Potential 70-107



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